CLAIMS

1. An electrode used for a fuel cell, comprising a substrate, a current-collector arranged on one of surfaces of said substrate, and a catalyst layer arranged on the other surface of said substrate,

characterized in that said current-collector and said substrate are bonded to each other.

2. The electrode used for a fuel cell as set forth in claim 1, wherein said substrate contains carbon as a principal component.

3. The electrode used for a fuel cell as set forth in claim 2, wherein said current-collector contains an element which will make carbide.

4. The electrode used for a fuel cell as set forth in claim 3, wherein said current-collector contains one or more element(s) selected from a group consisting of Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, Mn, Fe, Co, Ni, Al and C.

5. The electrode used for a fuel cell as set forth in claim 1 or 2, wherein said current-collector contains one or more element(s) selected from a group consisting of Au, Ag, Cu and Pt.

6. The electrode used for a fuel cell as set forth in claim 1, 2 or 3, wherein said current-collector is comprised of a metal plate or a metal mesh.

7. The electrode used for a fuel cell as set forth in any one of claims 1 to 6, wherein said current-collector has a thickness equal to or greater than 0.05 mm, but equal to or smaller than 1 mm.

8. A fuel cell comprising a fuel electrode, an oxidizer electrode, and a solid electrolyte film sandwiched between said fuel electrode and said oxidizer electrode,

characterized in that one of said fuel electrode and said oxidizer electrode is comprised of an electrode defined in any one of claims 1 to 7.

9. The fuel cell as set forth in claim 8, wherein said fuel electrode is comprised of said electrode, and fuel is supplied directly to a surface of the current-collector of said electrode.

10. The fuel cell as set forth in claim 8, wherein said fuel electrode is comprised of said electrode, and further comprising a fuel reservoir or a fuel channel making contact with a surface of said current-collector of said electrode for supplying fuel to said fuel electrode.

11. The fuel cell as set forth in any one of claims 8 to 10, wherein said oxidizer electrode is comprised of said electrode, and an oxidizer is supplied directly to a surface of said current-collector of said electrode.

12. The fuel cell as set forth in any one of claims 8 to 11, wherein said current-collector of said electrode defining said oxidizer electrode makes direct contact at a surface thereof with atmosphere.

13. The fuel cell as set forth in any one of claims 8 to 11, further comprising a packing material with which said current-collector is packed at a surface thereof.

14. The fuel cell as set forth in any one of claims 8 to 13, wherein organic liquid fuel is supplied to said fuel electrode.

15. A fuel cell comprising a plurality of unit cells wherein unit cells disposed adjacent to each other are connected with one another through a connection electrode,

characterized in that each of said unit cells is comprised of a fuel cell defined in any one of claims 8 to 14.

16. The fuel cell as set forth in claim 15, wherein said plurality of unit cells have a common solid electrolyte film.

17. A fuel cell comprising a cylindrical fuel reservoir, and a plurality of unit cells,

characterized in that each of said unit cells is comprised of a fuel cell defined in any one of claims 8 and 11 to 14, and

said fuel electrode of each of said unit cells is arranged on at least one of outer and inner surfaces of said fuel reservoir.

18. The fuel cell as set forth in claim 17, further comprising a connection electrode through which unit cells disposed adjacent to each other are connected to each other.

19. The fuel cell as set forth in claim 18 or 19, wherein said plurality of unit cells have a common solid electrolyte film.

20. A method of fabricating a fuel cell comprising a substrate, a current-collector arranged on one of surfaces of said substrate, and a catalyst layer arranged on the other surface of said substrate, comprising:

a first step of coating a solution containing both particles containing solid polymer electrolyte and carbon particles carrying at catalyst, onto one of surfaces

of said substrate for forming said catalyst layer; and

a second step of bonding said substrate at the other surface thereof to said current-collector.

21. The method as set forth in claim 20, wherein said substrate and said current-collector are bonded to each other by thermal compression in said second step.

22. The method as set forth in claim 20, wherein said substrate and said current-collector are bonded to each other by brazing in said second step.

23. The method as set forth in claim 22, wherein said substrate and said current-collector are bonded to each other by brazing in said second step through the use of one or more brazing metals selected from a group consisting of Pd, Fe, Ti, Ni, Zr, Cd and Al.

24. The method as set forth in claim 20, wherein said substrate contains carbon as a principle component, said current-collector contains metal, and said second step is comprised of a step of forming a bonding layer composed of metal carbide between said substrate and said current-collector.

25. The method as set forth in claim 24, wherein said bonding layer contains one or more elements selected from a group consisting of Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, Mn, Fe, Co, Ni and Al.

26. A method of fabricating a fuel cell, comprising the steps of:

fabricating an electrode in accordance with the method defined in any one of claims 20 to 25; and

compressing said solid electrolyte film and said electrode to each other with

said solid electrolyte film and said electrode being kept to make contact with each other, for bonding said solid electrolyte film and said electrode to each other.